

REMARKS

A. Background

Claims 1-16 were pending in the application at the time of the Office Action with claims 6-10 being withdrawn due to an earlier restriction requirement. Claims 1-4 and 11-15 were rejected as being obvious over cited art. Claim 5 and 16 were objected to as being dependent upon a rejected base claim. By this response applicant has cancelled claims 1, 6-10, 12, and 13; amended claims 2-5, 11, 15, and 16; and added new claims 17-22. As such, claims 2-5, 11, and 14-22 are presented for the Examiner's consideration in light of the following remarks.

B. Proposed Amendments

Applicant has herein amended claims 2-5, 11, 15, and 16 to further clarify the invention and to address formal matters. Specifically, claims 5 and 16 were rewritten in independent form to include all the limitations of the claims from which they previously depended; claims 2-5 were amended to now depend from claim 5; and claims 11 and 15 were amended to recite first and second n-type cladding layers. Applicant has also added new claims 17-22. The new claims and the amendments to the existing claims are supported at least by page 27, line 25 to page 28, line 16 of the specification. Applicant further submits that the new claims are directed to subject matter that falls within the elected subject matter set forth in a previous paper. In view of the foregoing, Applicant respectfully submits that the amendments to the claims do not introduce new matter and entry thereof is respectfully requested.

In view of the foregoing, Applicant respectfully submits that the amendments to the claims do not introduce new matter and entry thereof is respectfully requested.

C. Allowable Subject Matter

Page 4 of the Office Action objects to claims 5 and 16 as being dependent upon a rejected base claim, but states that claims 5 and 16 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Accordingly, as noted above, Applicant has herein rewritten claims 5 and 16 in independent form incorporating the limitations of claims 1 and 11, respectively, from which claims 5 and 16 previously depended. As such, Applicant submits that claims 5 and 16, as well as corresponding dependent claims 2-4, are in allowable condition.

In connection with the foregoing, Applicant respectfully notes that an objection, by definition, concerns only the form of the claim(s) (as distinguished from the substance of the claim) with respect to which the objection has been posed. *See* MPEP §§ 706.01, 608.01(n) (emphasis added). Thus, simply rewriting a dependent claim in the manner suggested by the Examiner constitutes only a change to the format of the claim and, without more, has no effect with regard to the substance of the rewritten claim.

Accordingly, because claims 5 and 16 have only been amended to incorporate the limitations of claims from which they previously depended, Applicant respectfully submits that no change has been made herein to the substance of such claims and, further, that such claims, as rewritten herein, are now in condition for allowance.

D. Rejection based on 35 U.S.C. § 103

Pages 2-4 of the Office Action reject claims 1-4 and 11-15 under 35 USC § 103(a) as being unpatentable over U.S. Patent No. 6,075,254 to Shen et al. (“*Shen*”) in view of U.S. Patent Application Publication No. 2007/0076999 to Miyazaki et al. (“*Miyazaki*”) and U.S. Patent No.

7,118,861 to Naaman et al. (“*Naaman*”). Inasmuch as claims 1, 12, and 13 have been cancelled herein and claims 2-4 have been amended to depend from allowable claim 5, the rejection of those claims has been rendered moot. Regarding the rest of the rejected claims, Applicant respectfully traverses this rejection and submits that the allegedly obvious combination would not include each and every element recited in the rejected claims.

As noted above, claim 11 has been amended herein to recite “**a first n-type cladding layer,**” and “**a second n-type cladding layer,**” to go along with the first and second semi-insulating cladding layers that were already recited in claim 11. Applicant submits that none of the cited art teaches or suggests such limitations in combination with the other limitations of claim 11.

Shen discloses a semiconductive waveguide modulator 17. As shown in Figures 1 and 2, waveguide modulator 17 comprises a substrate 15 having mounted thereon, in the following order, an n-type lower cladding layer 41, a lower confinement layer 21, a quantum well structure 13, an upper confinement layer 23, and a p-type upper cladding layer 19. See col. 4, lines 46-54. This is the only modulator stacking structure disclosed in *Shen*. Applicant notes that *Shen* only discloses a single n-type cladding layer in the layered structure. *Miyazaki* and *Naaman* were cited merely for allegedly teaching that various compositions are semi-insulating and semi-conductive materials. Neither *Miyazaki* nor *Naaman* disclose more than a single n-type stacking layer.

Because none of the cited art disclose more than a single n-type cladding layer, Applicant submits that even if, *arguendo*, *Shen* is combined with *Miyazaki* and *Naaman* in the allegedly obvious manner set forth in the Office Action, the combination does not teach or suggest “**a first n-type cladding layer,**” and “**a second n-type cladding layer,**” as recited in claim 11. Accordingly, Applicant respectfully requests that the obviousness rejection of claim 11 be withdrawn.

Claims 14 and 15 depend from claim 11 and thus incorporate the limitations thereof. As such,

Applicant submits that claims 14 and 15 are distinguished over the cited references for at least the same reasons as discussed above with regard to claim 11. Accordingly, Applicant respectfully requests that the obviousness rejections of claims 14 and 15 also be withdrawn.

No other rejections or objections are set forth in the Office Action.

D. New Claims

Applicant submits that each of new claims 17-22 is distinguished over the cited art of record. For example, claims 18 and 22 each recite “**a first n-type cladding layer,**” and “**a second n-type cladding layer.**” As discussed above with regard to claim 11, none of the cited art, taken individually or combined, teach or suggest the aforementioned limitations. Claim 17 depends from claim 11 and claims 19-21 depend from claim 18 and thus incorporate the limitations thereof. As such, Applicant submits that claims 17 and 19-21 are distinguished over the cited art for at least the same reasons discussed above regarding claims 11 and 18.

E. Conclusion

Applicant notes that this response does not discuss every reason why the claims of the present application are distinguished over the cited art. Most notably, applicant submits that many if not all of the dependent claims are independently distinguishable over the cited art. Applicant has merely submitted those arguments which it considers sufficient to clearly distinguish the claims over the cited art.

In view of the foregoing, applicant respectfully requests the Examiner’s reconsideration and allowance of claims 2-5, 11, and 14-22 as amended and presented herein.

In the event there remains any impediment to allowance of the claims which could be clarified in a telephonic interview, the Examiner is respectfully requested to initiate such an interview with the undersigned.

Dated this 18th day of October, 2007.

Respectfully submitted,

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